REMARKS

The Office Action mailed October 13, 2006, has been received and reviewed. Claims 1 through 9, 11 through 74, 179 through 186, and 189 through 193 are currently pending in the application. Claims 1 through 9, 11 through 37, 39 through 50, 55 through 64, 68, 72 through 74, 179 through 186, 189, 191, and 193 stand rejected. Claims 38, 51 through 54, 65 through 67, and 69 through 71 have been objected to as being dependent upon rejected base claims, but the indication of allowable subject matter in such claims is noted with appreciation. Claims 190 and 192 are allowed. Applicants have amended claims 1, 5, 11, 16, 23, 36, 46, 63, 64, 73, 180, 189, and 193, and respectfully request reconsideration of the application as amended herein.

35 U.S.C. § 102 Anticipation Rejections

Anticipation Rejection Based on Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1) and Paper No. WOCD-0306-02 to Galloway (Paper No. 2)

Claims 1 through 5, 8, 9, 11 through 23, 27 through 29, 32, 33, 35 through 37, 39 through 44, 46 through 50, 57 through 60, 63, 64, 72 through 74, 179, 189, 191, and 193 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1) and Paper No. WOCD-0306-02 to Galloway (Paper No. 2). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Regarding independent claim 1, Applicants respectfully assert that independent claim 1 is not anticipated by either Paper No. 1 or Paper No. 2 under 35 U.S.C. § 102(a) because neither Paper No. 1 nor Paper No. 2 describes "a casing bit having an inner profile, an outer profile, and a nose portion, at least a portion of the inner profile having a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of

another drilling tool for subsequently drilling through a portion of the casing bit, " as recited in independent claim 1 as currently amended.

The Examiner has asserted at Page 3 of the outstanding Office Action that "[s]ince both the DS 1 and DS 2 bits are made to be drilled out, then they would have to have an inner profile that is configured to receive, and correspond to, the profile of the subsequent drill bit that is lowered into the first bit." The Examiner appears to assert that any casing bit that receives a subsequent drill bit must inherently have an inner profile that corresponds to a drilling profile of the subsequent drill bit. Applicants respectfully disagree.

Applicants acknowledge the Examiner's duty under M.P.E.P. § 2111 to give the claims their broadest reasonable interpretation consistent with the specification. Applicants respectfully assert, however, that the Examiner's interpretation of the term "correspond" is not consistent with either the plain meaning of the term or the specification of the present application. *See e.g.*, *As-Filed Specification of the Present Application*, Paragraphs [0120] – [0127]. The term "correspond" is defined by the Tenth Edition of Merriam Webster's Collegiate Dictionary as meaning "1a: to be in conformity or agreement; 1b: to compare closely: MATCH; 1c: to be equivalent or parallel." Applicants respectfully assert that a casing bit does not inherently have an inner profile that conforms with, compares closely with, matches, or is equivalent to a drilling profile of a drill bit used to subsequently drill through the casing bit.

Nonetheless, in an effort to expedite prosecution of the present application, Applicants have amended independent claim 1 to require that "at least a portion of the inner profile having a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool for subsequently drilling through a portion of the casing bit."

Applicants respectfully assert that neither Paper No. 1 nor Paper No. 2 describes, teaches, or suggests a casing bit having such an inner profile. The inner profile of the DS 2 is not described or illustrated in either Paper No. 1 or Paper No. 2.

As neither Paper No. 1 nor Paper No. 2 describes each and every element set forth in claim 1, Applicants assert that claim 1 is not anticipated by either Paper No. 1 or Paper No. 2 and

respectfully request that the Examiner withdraw the rejection of independent claim 1 under 35 U.S.C. § 102(a).

Applicants additionally assert that each of dependent claims 2-4, 8-23, 27-29, 32-37, 39-44, 46-50, 57-60, 63, 64, and 69-74 is allowable at least because each depends from claim 1, which is allowable. Therefore, Applicants assert that these claims are not anticipated by either Paper No. 1 or Paper No. 2 and respectfully request that the Examiner withdraw the rejection of these dependent claims under 35 U.S.C. § 102(a).

Regarding dependent claim 5, Applicants additionally assert that neither Paper No. 1 nor Paper No. 2 describes a casing bit that includes "... a polycrystalline diamond cutting element ... positioned in rotational alignment with ... a tungsten carbide cutting element.," as recited in dependent claim 5 as amended. Therefore, Applicants respectfully request that the Examiner withdraw the rejection of dependent claim 5 under 35 U.S.C. § 102(a) for this additional reason.

Regarding dependent claim 11, Applicants additionally assert that neither Paper No. 1 nor Paper No. 2 describes a casing bit "wherein at least a portion of the outer profile of the casing bit has a geometry substantially matching the geometry of the drilling profile of the leading face of the drilling tool," as recited in dependent claim 11 as amended. Therefore, Applicants respectfully request that the Examiner withdraw the rejection of dependent claim 11 under 35 U.S.C. § 102(a) for this additional reason.

Regarding dependent claim 23, Applicants additionally assert that neither Paper No. 1 nor Paper No. 2 describes a casing bit "wherein a majority of the first portion of cutting elements comprises an abrasive..., wherein an amount of the abrasive on each cutting element of the majority of the first portion of cutting elements is selectively tailored to substantially wear away in response to drilling through a selected formation region," as recited in dependent claim 23 as amended. Paper No. 2 describes TSD cutters that are disposed in a supporting material, and that the material is worn away during drilling - not the cutting element – thereby causing loss of cutting elements to occur. *Paper No. 2*, DrillShoe Tools Section, Second Paragraph. Paper No. 2 does not describe that the TSD cutters include an amount of abrasive thereon that is selectively tailored to substantially wear away in response to drilling through a selected formation region. Therefore,

Applicants respectfully request that the Examiner withdraw the rejection of dependent claim 23 under 35 U.S.C. § 102(a) for this additional reason.

Regarding dependent claims 36 and 37, Applicants additionally assert that neither Paper No. 1 nor Paper No. 2 describes "at least one rotationally trailing groove formed in at least one of the plurality of blades rotationally directly behind at least one cutting element affixed thereto," as recited in dependent claim 36 as amended. In contrast, the grooves shown in Figures 2 and 3 of Paper No. 1 are positioned laterally between the cutting elements on the blades, and thus, clearly not rotationally directly behind the cutting elements. Therefore, Applicants respectfully request that the Examiner withdraw the rejection of dependent claims 36 and 37 under 35 U.S.C. § 102(a) for this additional reason.

Regarding dependent claim 41, Applicants additionally assert that neither Paper No. 1 nor Paper No. 2 describes a casing bit "wherein at least a portion of [a] nozzle [or] a sleeve is configured to be removed in relation to an expected amount of erosion," as recited in dependent claim 41. The Examiner states that because parts of the nozzles are eventually removed during drilling due to an expected amount of erosion that paper 2 describes the limitations of claim 41. The Applicants respectfully disagree. While parts of the nozzles may be removed by erosion during drilling, Paper No. 2 does not describe that the nozzles are configured to be removed due to an expected amount of erosion. In fact, Paper No. 2 describes configuring the nozzles to improve erosion resistance of nozzles "without effecting [sic] drillability." *Paper No. 2*, DrillShoe Tools Section, Fourth Paragraph. Therefore, Applicants respectfully request that the Examiner withdraw the rejection of dependent claim 41 under 35 U.S.C. § 102(a) for this additional reason.

Regarding dependent claims 63 and 64, Applicants additionally assert that neither Paper No. 1 nor Paper No. 2 describes a casing bit having one or more grooves that is or are "sized and configured to preferentially facilitate separation of at least a portion of the casing bit into sections as the at least a portion of the casing bit is drilled through by the another drilling tool," as recited in dependent claims 63 and 64. The Examiner has asserted at Page 5 of the outstanding Office Action that the grooves behind and between the cutting elements on the blades would inherently cause the bit face to break into sections when the next drill bit drills through the first bit. Applicants respectfully disagree. As seen in FIGS. 9 and 12 of Paper 1, the blades remain fully in

tact (although bent) after the bit has been displaced — note the blade has 13 cutters prior to being displaced and 13 cutters after being displaced. Thus, the grooves clearly do not inherently cause the blades to break into sections when being drilled through by the subsequent drilling tool. Furthermore, there is no description set forth in Paper No. 1 or Paper No. 2 that describes the DS 1, DS 2, or DS 3, as including a groove sized and configured to preferentially facilitate separation of the casing bits into sections, as recited in dependent claims 63 and 64. For these additional reasons, Applicants respectfully request that the Examiner withdraw the rejections of dependent claims 63 and 64 under 35 U.S.C. § 102(a).

Regarding dependent claims 69 and 70, Applicants additionally assert that neither Paper No. 1 nor Paper No. 2 describes a casing bit having "an outer shell and at least one inner core, the outer shell extending over substantially the entire nose portion of the casing bit," as recited in dependent claim 69. The DS 1 and DS 2, as described in the Background Section of Paper No. 1, include "a central aluminum core" that is "housed inside a steel body." Regarding the DS 3, Paper No. 1 describes the Inner Sleeve Assembly of the DS 3 as having an aluminum nose and a steel inner sleeve, which are screwed together to form the major part of the Inner Sleeve Assembly. As clearly shown in the Figures of Paper No. 1, the steel body of the DS 1 and DS 2 does not extend over substantially the entire portion of either the DS 1 or the DS 2. Similarly, the steel inner sleeve of the DS 3 does not extend over substantially the entire nose portion of the DS 3. The cited references do not describe that the steel body of the DS 1 and DS 2, or the steel inner sleeve of the DS 3, may be modified to extend over substantially the entire nose portion of the DS 1, DS 2, or DS 3. Therefore, Applicants respectfully request that the Examiner withdraw the rejection of dependent claims 69 and 70 under 35 U.S.C. § 102(a) for this additional reason.

Regarding dependent claim 73, Applicants additionally assert neither Paper No. 1 nor Paper No. 2 describes a casing bit comprising "at least one of an incendiary agent, an explosive agent, and a reactive agent . . . configured to render the casing bit more drillable," as recited in dependent claim 73 as amended. Therefore, Applicants respectfully request that the Examiner withdraw the rejection of dependent claim 73 under 35 U.S.C. § 102(a) for this additional reason.

Regarding independent claim 179, Applicants respectfully assert that independent claim 179 is not anticipated by either Paper No. 1 or Paper No. 2 under 35 U.S.C. § 102(a) because neither Paper No. 1 nor Paper No. 2 describes a casing bit that includes "a plurality of discrete cutting element retention structures disposed on [a] nose portion, wherein each discrete cutting element retention structure is configured to carry a single cutting element," as recited in independent claim 179 as currently amended. Paper No. 1 and Paper No. 2 each describe cutting elements that are carried by blades which are disposed on a nose portion. The blades however, are configured to carry a plurality of cutting structures. The Examiner asserts that the pockets on the blades each contain a single cutting element. *Outstanding Office Action, mailed on October 13, 2006, page 13.* Applicants respectfully assert, however, that cutter pockets clearly are not "structures," but rather are merely features defined by the blades, which are actual structures. Neither Paper No. 1 nor Paper No. 2 describes a plurality of structures configured to carry a single cutting element, as recited by independent claim 179. As neither Paper No. 1 nor Paper No. 2 describes each and every element set forth in claim 179, Applicants assert that claim 179 is not anticipated by either Paper No. 1 or Paper No. 2 and respectfully request that the Examiner withdraw the rejection of independent claim 179 under 35 U.S.C. § 102(a).

Regarding independent claim 189, Applicants respectfully assert that independent claim 189 is not anticipated by either Paper No. 1 or Paper No. 2 under 35 U.S.C. § 102(a) because neither Paper No. 1 nor Paper No. 2 describes a casing bit that includes "... a polycrystalline diamond cutting element ... positioned in rotational alignment with ... a tungsten carbide cutting element.," as recited in independent claim 189 as currently amended. Paper No. 2 describes, with reference to Figure 3 thereof, a casing bit having TSD cutters mounted "along the entire face of the blade[s]". *Paper No. 2*, DrillShoe Tools Section, Second Paragraph. However, the TSD cutters do not include any PDC cutting element that is rotationally aligned with a tungsten carbide element, as recited in claim 189. As neither Paper No. 1 nor Paper No. 2 describes each and every element set forth in claim 189, Applicants assert that claim 189 is not anticipated by either Paper No. 1 or Paper No. 2 and respectfully request that the Examiner withdraw the rejection of independent claim 189 under 35 U.S.C. § 102(a).

Regarding independent claim 191, Applicants respectfully assert that independent claim 191 is not anticipated by either Paper No. 1 or Paper No. 2 under 35 U.S.C. § 102(a) because neither Paper No. 1 nor Paper No. 2 describes a casing bit that includes "at least one groove sized and configured to preferentially facilitate failure of at least a portion of the casing bit into sections," as recited in independent claim 191 as currently amended. The Examiner has asserted at Page 5 of the outstanding Office Action that the grooves behind and between the cutting elements on the blades would inherently cause the bit face to break into sections when the next drill bit drills through the first bit. Applicants respectfully disagree. As seen in FIGS. 9 and 12 of Paper 1, the blades remain fully intact (although bent) after the bit has been displaced — note the blade has 13 cutters prior to being displaced and 13 cutters after being displaced. Thus, the grooves clearly do not inherently cause the blades to break into sections when being drilled through by the subsequent drilling tool. Furthermore, there is no description set forth in Paper No. 1 or Paper No. 2 that describes the DS 1, DS 2, or DS 3, as including a groove sized and configured to preferentially facilitate separation of the casing bits into sections, as recited in independent claim 191. As neither Paper No. 1 nor Paper No. 2 describes each and every element set forth in claim 191, Applicants assert that claim 191 is not anticipated by either Paper No. 1 or Paper No. 2 and respectfully request that the Examiner withdraw the rejection of independent claim 191 under 35 U.S.C. § 102(a).

Regarding independent claim 193, Applicants respectfully assert that independent claim 193 is not anticipated by either Paper No. 1 or Paper No. 2 under 35 U.S.C. § 102(a) because neither Paper No. 1 nor Paper No. 2 describes a casing bit that includes "at least one of an incendiary agent, an explosive agent, and a reactive agent . . . configured to render the casing bit more drillable," as recited in independent claim 193 as currently amended. As neither Paper No. 1 nor Paper No. 2 describes each and every element set forth in claim 193, Applicants assert that claim 193 is not anticipated by either Paper No. 1 or Paper No. 2 and respectfully request that the Examiner withdraw the rejection of independent claim 193 under 35 U.S.C. § 102(a).

Anticipation Rejection Based on U.S. Patent No. 6,062,326 to Strong et al.

Claims 1, 2, 4 through 9, and 179 through 186 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Strong et al. (U.S. Patent No. 6,062,326). Applicants respectfully traverse this rejection, as hereinafter set forth.

Regarding independent claim 1, Applicants respectfully assert that independent claim 1 is not anticipated by Strong et al. under 35 U.S.C. § 102(b) because Strong et al. does not describe "a casing bit having an inner profile, an outer profile, and a nose portion, at least a portion of the inner profile having a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool for subsequently drilling through a portion of the casing bit, " as recited in independent claim 1 as currently amended.

The Examiner has asserted at Page 6 of the outstanding Office Action that "[s]ince the bit is made to be drilled out, then it would have to have an inner profile that is configured to receive, and correspond to, the profile of the subsequent drill bit that is lowered into the first bit." As discussed above in relation to the rejections under Paper No. 1 and Paper No. 2, Applicants respectfully assert that the Examiner's interpretation of the term "correspond" is not consistent with either the plain meaning of the term or the specification of the present application, and that Strong et al. does not describe a casing bit as recited in claim 1 as previously presented. *See e.g., As-Filed Specification of the Present Application*, Paragraphs [0120] – [0127].

Nonetheless, in an effort to expedite prosecution of the present application, Applicants have amended independent claim 1 to require that "at least a portion of the inner profile having a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool for subsequently drilling through a portion of the casing bit." Strong et al. clearly does not describe such a casing bit.

Strong et al. describes, with reference to Figure 4, a casing bit 10 (casing shoe having cutters thereon) having an inner profile that is substantially flat (i.e., the interior surface of central portion 40 of drillable material.). *Strong et al.*, column 3, lines 37-53. Strong et al. does not describe that at least a portion of the drilling profile of a leading face of another drilling tool for subsequently drilling through the casing bit is also substantially flat. Therefore, Strong et al. clearly does not describe the casing bit 10 as having an inner profile, at least a portion of witch has a

geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool, as recited in independent claim 1, as currently amended. Strong et al. does describe additional variations of the casing bit 10 at column 5, lines 1-46. These variations of the casing bit 10, however, do not include in inner profile as recited in claim 1.

As Strong et al. does not describe each and every element set forth in claim 1, Applicants assert that claim 1 is not anticipated by Strong et al. and respectfully request that the Examiner withdraw the rejection of independent claim 1 under 35 U.S.C. § 102(b).

Applicants additionally assert that each of dependent claims 2 and 4-9 is allowable at least because each depends from claim 1, which is allowable. Therefore, Applicants assert that these claims are not anticipated by Strong et al. and respectfully request that the Examiner withdraw the rejection of these dependent claims under 35 U.S.C. § 102(b).

Regarding independent claim 179, Applicants respectfully assert that independent claim 179 is not anticipated by Strong et al. under 35 U.S.C. § 102(b) because Strong et al. does not describe a casing bit that includes "a plurality of discrete cutting element retention structures disposed on [a] nose portion, wherein each discrete cutting element retention structure is configured to carry a single cutting element," as recited in independent claim 179 as currently amended. Strong et al. describes, with reference to FIG. 3, polycrystalline diamond compact (PDC) elements 48 that are set into the lateral edges of linear flutes 42. The flutes 42 are configured to carry a plurality of cutting elements 48 not a single cutting element. Applicants respectfully assert that cutter pockets on or in the flutes clearly are not "structures," but rather are merely features defined by the blades, which are actual structures. Strong et al. does not describe a plurality of structures configured to carry a single cutting element, as recited by independent claim 179. As Strong et al. does not describe each and every element set forth in claim 179, Applicants assert that claim 179 is not anticipated by Strong et al. and respectfully request that the Examiner withdraw the rejection of independent claim 179 under 35 U.S.C. § 102(b).

Regarding independent claim 180, Applicants respectfully assert that independent claim 180 is not anticipated by Strong et al. under 35 U.S.C. § 102(b) because Strong et al. does not describe a casing bit that includes "threads for securing the casing bit to a casing section," and "at least one gage section extending longitudinally from adjacent the nose portion of the casing bit, the at least one gage section configured to extend longitudinally adjacent at least a portion of a casing section when the casing section is secured to the casing bit," as recited in independent claim 180 as amended.

Strong et al. describes a casing shoe 30 that includes a casing 32 having an internally threaded box portion 34 at its tail end, for connection to a casing string. *Strong et al.*, column 3, lines 40-42. The forward end of the casing 32 includes a generally rounded nose portion 36. The threaded box portion 34 is not, and does not include, a gage section configured to define an outermost radius of the casing bit 10.

Applicants respectfully assert that if the entire casing shoe 30 is considered to be a "casing bit," as recited in claim 180, the casing shoe 30 is not within the scope of claim 180 because the casing shoe 30 does not include at least one gage section configured to extend longitudinally adjacent at least a portion of a casing section when the casing section is secured to the casing bit. The gage sections 46 of the flutes 42 would not extend longitudinally adjacent to another casing section of a casing string when the casing shoe 30 is attached to that casing section using the threaded box portion 34. If, however, only the generally rounded nose portion 36 of the casing shoe 30 is considered to be a "casing bit," as recited in claim 180, then the casing shoe still is not within the scope of claim 180 because the generally rounded nose portion 36 does not include threads for securing the rounded nose portion 36 to the casing 32. Therefore, Strong et al. clearly does not describe a casing bit that includes each and every element recited in claim 180. As Strong et al. does not describe each and every element set forth in claim 180, Applicants assert that claim 180 is not anticipated by Strong et al. and respectfully request that the Examiner withdraw the rejection of independent claim 180 under 35 U.S.C. § 102(b).

Applicants additionally assert that each of dependent claims 181-186 is allowable at least because each depends from claim 180, which is allowable. Therefore, Applicants assert that these

claims are not anticipated by Strong et al. and respectfully request that the Examiner withdraw the rejection of these dependent claims under 35 U.S.C. § 102(b).

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1) in view of U.S. Patent No. 6,460,631 to Dykstra et al.

Claims 24 through 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1 and Paper No. 2) in view of Dykstra et al. (U.S. Patent No. 6,460,631). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

Each of claims 24 through 26 depends from independent claim 1 and includes the elements and limitations recited therein. Applicants respectfully assert that claims 24 through 26 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1 and Paper No. 2 in view of Dykstra et al. because the cited references, when combined, do not teach or suggest "a casing bit having an inner profile, an outer profile, and a nose portion, at least a portion of the inner profile having a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool for subsequently drilling through a portion of the casing bit, " as recited in independent claim 1, as currently amended.

As previously discussed, neither Paper No. 1 nor Paper No. 2 describes, teaches, or suggests a casing bit having an inner profile, at least a portion of which has a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool. The teachings of Dykstra et al. do not satisfy the deficiencies.

Dykstra et al. teaches a rotary drag bit that includes cutters and wear knots on the face thereof. The wear knots provide a bearing surface that augments depth of cut control of the cutters. *Dykstra et al.*, column 6, lines 21-33. Dykstra et al. does not teach or suggest a casing bit. Dykstra et al. does not teach or suggest an inner profile of a bit (either a conventional drill bit or a casing bit) that has a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool for subsequently drilling through the bit.

As Paper No. 1, Paper No. 2, and Dykstra et al., when combined, do not teach or suggest all of the claim limitations of any one of claims 24 through 26, Applicants respectfully assert that claims 24 through 26 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1, Paper No. 2, and Dykstra et al., and request that the Examiner withdraw the rejection of dependent claims 24 through 26 under 35 U.S.C. § 103(a).

Obviousness Rejection Based on Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1) in view of U.S. Publication No. 2005/0145417 to Radford et al.

Claims 30 and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1 and Paper No. 2) in view of Radford et al. (U.S. Publication No. 2005/0145417). Applicants respectfully traverse this rejection, as hereinafter set forth.

Each of claims 30 and 31 depends from independent claim 1 and includes the elements and limitations recited therein. Applicants respectfully assert that claims 30 and 31 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1 and Paper No. 2 in view of Radford et al. because the cited references, when combined, do not teach or suggest "a casing bit having an inner profile, an outer profile,

and a nose portion, at least a portion of the inner profile having a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool for subsequently drilling through a portion of the casing bit, " as recited in independent claim 1, as currently amended.

As previously discussed, neither Paper No. 1 nor Paper No. 2 describes, teaches, or suggests a casing bit having an inner profile, at least a portion of which has a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool. The teachings of Radford et al. do not satisfy the deficiencies.

Radford et al. teaches expandable reamers, at least a portion of which may be coated with an adhesion resistant coating. *Radford et al.*, Page 18, Paragraph [160]. The adhesion resistant coating may inhibit adhesion of formation cuttings carried by a drilling fluid, and may include a polymer material. *Id.* Radford et al. does not teach or suggest an inner profile of a bit (either a conventional drill bit or a casing bit) or a reamer that has a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool for subsequently drilling through the bit.

As Paper No. 1, Paper No. 2, and Radford et al., when combined, do not teach or suggest all of the claim limitations of any one of claims 30 and 31, Applicants respectfully assert that claims 30 and 31 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1, Paper No. 2, and Radford et al., and request that the Examiner withdraw the rejection of dependent claims 30 and 31 under 35 U.S.C. § 103(a).

Obviousness Rejection Based on Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1) or U.S. Patent No. 6,062,326 to Strong et al. in view of U.S. Patent No. 6,510,906 to Richert et al.

Claim 34 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1 and Paper No. 2) or Strong et al. (U.S. Patent No. 6,062,326) in view of Richert et al. (U.S. Patent No. 6,510,906). Applicants respectfully traverse this rejection, as hereinafter set forth.

Claim 34 depends from independent claim 1 and includes the elements and limitations recited therein. Applicants respectfully assert that claim 34 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1 and Paper No. 2 or Strong et al. in view of Richert et al. because the cited references, when combined, do not teach or suggest "a casing bit having an inner profile, an outer profile, and a nose portion, at least a portion of the inner profile having a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool for subsequently drilling through a portion of the casing bit, " as recited in independent claim 1, as currently amended.

As previously discussed, neither Paper No. 1, Paper No. 2, nor Strong et al. describes, teaches, or suggests a casing bit having an inner profile, at least a portion of which has a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool. The teachings of Richert et al. do not satisfy the deficiencies.

Richert et al. teaches a drill bit with blades that may be curved extend generally radially outwardly in a spiral fashion from the centerline to the gage of the bit. *Richert et al.*, column 2, lines 15-23. Richert et al. does not describe, teach, or suggest an inner profile of a bit (either a conventional drill bit or a casing bit), at least a portion of which is configured to substantially match a geometry of at least a portion of the leading face of a drilling profile of another drilling tool for subsequently drilling through the bit.

As Paper No. 1 and Paper No. 2, or Strong et al., when combined with Richert et al., do not teach or suggest all of the claim limitations of claim 34, Applicants respectfully assert that claim 34 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1 and Paper No. 2, or Strong et al., in view of Richert et al., and request that the Examiner withdraw the rejection of dependent claim 34 under 35 U.S.C. § 103(a).

Obviousness Rejection Based on Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1) in view of U.S. Patent No. 6,439,326 to Huang et al.

Claim 45 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1) in view of Huang et al. (U.S. Patent No. 6,439,326). Applicants respectfully traverse this rejection, as hereinafter set forth.

Claim 45 depends from independent claim 1 and includes the elements and limitations recited therein. Applicants respectfully assert that claim 45 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1 and Paper No. 2 in view of Huang et al. because the cited references, when combined, do not teach or suggest "a casing bit having an inner profile, an outer profile, and a nose portion, at least a portion of the inner profile having a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool for subsequently drilling through a portion of the casing bit, " as recited in independent claim 1, as currently amended.

As previously discussed, neither Paper No. 1 nor Paper No. 2 describes, teaches, or suggests a casing bit having an inner profile, at least a portion of which has a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool. The teachings of Huang et al. do not satisfy the deficiencies.

Huang et al. teaches, with reference to FIG. 2, a drill bit 2 that includes a roller cone 4 and fixed cutters 8. *Huang et al.*, column 3, lines 40-41. Huang et al. does not describe, teach, or suggest an inner profile of a bit (either a conventional drill bit or a casing bit), at least a portion of which is configured to substantially match a geometry of at least a portion of the leading face of a drilling profile of another drilling tool for subsequently drilling through the bit.

As Paper No. 1, Paper No. 2, and Huang et al., when combined, do not teach or suggest all of the claim limitations of claim 45, Applicants respectfully assert that claim 45 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1, Paper No. 2, and Huang et al., and request that the Examiner withdraw the rejection of dependent claim 45 under 35 U.S.C. § 103(a).

Obviousness Rejection Based on Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1 and Paper No. 2)

Claims 55 and 56 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1 and Paper No. 2). Applicants respectfully traverse this rejection, as hereinafter set forth.

Each of claims 55 and 56 depends from independent claim 1 and includes the elements and limitations recited therein. Applicants respectfully assert that claims 55 and 56 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1 and Paper No. 2 because the cited references, when combined, do not teach or suggest "a casing bit having an inner profile, an outer profile, and a nose portion, at least a portion of the inner profile having a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool for subsequently drilling through a portion of the casing bit, " as recited in independent claim 1, as currently amended.

As previously discussed, neither Paper No. 1 nor Paper No. 2 describes, teaches, or suggests a casing bit having an inner profile, at least a portion of which has a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool.

As Paper No. 1 and Paper No. 2, when combined, do not teach or suggest all of the claim limitations of any one of claims 55 and 56, Applicants respectfully assert that claims 55 and 56 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1 and Paper No. 2, and request that the Examiner withdraw the rejection of dependent claims 55 and 56 under 35 U.S.C. § 103(a).

Obviousness Rejection Based on Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1 and Paper No. 2) in view of U.S. Patent No. 4,956,238 to Griffin

Claims 61 and 62 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1 and Paper No. 2) in view of Griffin

(U.S. Patent No. 4,956,238). Applicants respectfully traverse this rejection, as hereinafter set forth.

Each of claims 61 and 62 depends from independent claim 1 and includes the elements and limitations recited therein. Applicants respectfully assert that claims 61 and 62 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1 and Paper No. 2 in view of Griffin because the cited references, when combined, do not teach or suggest "a casing bit having an inner profile, an outer profile, and a nose portion, at least a portion of the inner profile having a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool for subsequently drilling through a portion of the casing bit, " as recited in independent claim 1, as currently amended.

As previously discussed, neither Paper No. 1 nor Paper No. 2 describes, teaches, or suggests a casing bit having an inner profile, at least a portion of which has a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool. The teachings of Griffin do not satisfy the deficiencies.

Griffin teaches alloys for bonding cutting elements to carbide carriers. *Griffin*, column 4, lines 40-44. In Table 1, Griffin teaches melt ranges for seven alloys, each of which ranges comprising temperatures lower than 1305° Fahrenheit. Griffin does not teach or suggest a casing bit having an inner profile, at least a portion of which is configured to substantially match a geometry of at least a portion of a leading face of a drilling profile of another drilling tool.

As Paper No. 1, Paper No. 2, and Griffin, when combined, do not teach or suggest all of the claim limitations of any one of claims 61 and 62, Applicants respectfully assert that claims 61 and 62 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1 and Paper No. 2, in view of Griffin, and request that the Examiner withdraw the rejection of dependent claims 61 and 62 under 35 U.S.C. § 103(a).

Obviousness Rejection Based on Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1 and Paper No. 2) in view of U.S. Publication No. 2004/0245020 to Giroux et al.

Claim 68 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Paper No. WOCD-0306-05 to McKay et al. (Paper No. 1 and Paper No. 2) in view of Giroux et al. (U.S. Publication No. 2004/0245020). Applicants respectfully traverse this rejection, as hereinafter set forth.

Claim 68 depends from independent claim 1 and includes the elements and limitations recited therein. Applicants respectfully assert that claim 68 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1 and Paper No. 2 in view of Giroux et al. because the cited references, when combined, do not teach or suggest "a casing bit having an inner profile, an outer profile, and a nose portion, at least a portion of the inner profile having a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool for subsequently drilling through a portion of the casing bit, " as recited in independent claim 1, as currently amended.

As previously discussed, neither Paper No. 1 nor Paper No. 2 describes, teaches, or suggests a casing bit having an inner profile, at least a portion of which has a geometry configured to substantially match a geometry of at least a portion of a drilling profile of a leading face of another drilling tool. The teachings of Giroux et al. do not satisfy the deficiencies.

Giroux et al. teaches, with reference to FIGS. 33A-33D, drilling a wellbore 4102 using a bottom hole assembly (BHA) 4200 attached to casing 4104. *Giroux et al.*, Page 22, Paragraph [0225]. The BHA 4200 includes a drill bit 4204. *Id.* The BHA 4200 may further include a measurement-while-drilling (MWD) tool 4107, which "may also have sensors to monitor one or more downhole parameters, such as conditions within the wellbore...and/or geophysical parameters. *Giroux et al.*, Page 23, Paragraph [0238]. Giroux et al. does not teach or suggest a casing bit having an inner profile, at least a portion of which is configured to substantially match a geometry of at least a portion of a leading face of a drilling profile of another drilling tool.

As Paper No. 1, Paper No. 2, and Giroux et al., when combined, do not teach or suggest all of the claim limitations of claim 68, Applicants respectfully assert that claim 68 could not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Paper No. 1 and Paper No. 2 in view of Giroux et al., and request that the Examiner withdraw the rejection of dependent claim 68 under 35 U.S.C. § 103(a).

Objections to Claims 38, 51-54, 65-67 and 69-71/Allowable Subject Matter

As an initial matter, Applicants note a discrepancy between the claims objected to as listed at Page 12 of the outstanding Office Action and in the Office Action Summary Form (PTOL-326) accompanying the same. In particular, claims 38, 51-54, 65-67, and 69-71 were indicated as being objected to in the Office Action Summary Form (PTOL-326), but only claims 38, 51, 52, 65-67, and 69-71 were objected to as being dependent upon a rejected base claim. Applicants respectfully request written correction and/or clarification of this matter be set forth by the Examiner in the next office communication.

Applicants have assumed herein that claims 53 and 54 were unintentionally left out of the listing at Page 12 of the outstanding Office Action, and that each of claims 38, 51 through 54, 65 through 67, and 69 through 71 stands objected to as being dependent upon a rejected base claim, but is indicated to contain allowable subject matter and would be allowable if placed in appropriate independent form. Applicants note with appreciation the indication of allowable subject matter. Applicants, however, have amended independent claim 1 and assert that claims 38, 51 through 54, 65 through 67, and 69 through 71, as presented herein, depend from an allowable base claim. Applicants, therefore, respectfully request that the Examiner withdraw the objection to dependent claims 38, 51 through 54, 65 through 67, and 69 through 71.

Objections to Claims 16 and 46

Claims 16 and 46 are objected to due to informalities in the claim language. Claims 16 and 46 have each been amended to depend from independent claim 1 instead of claim 10, which was previously cancelled. Applicants therefore request that the Examiner withdraw the objection to claims 16 and 46.

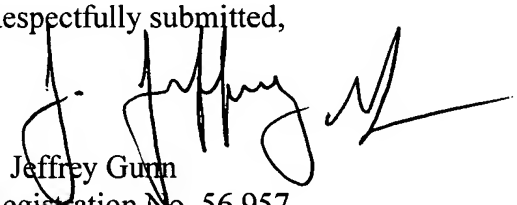
ENTRY OF AMENDMENTS

The amendments to claims 1, 5, 11, 16, 23, 36, 46, 63, 64, 73, 180, 189, and 193 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application. Further, the amendments do not raise new issues or require a further search.

CONCLUSION

Claims 1 through 9, 11 through 74, 179 through 186, and 189 through 193 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



J. Jeffrey Gunn
Registration No. 56,957
Attorney for Applicants
TRASKBRITT
P.O. Box 2550
Salt Lake City, Utah 84110-2550
Telephone: 801-532-1922

Date: January 16, 2007
JJG/dlm:slm

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